



Abstract View

[Volume 9, Issue 6 \(November 1979\)](#)

Journal of Physical Oceanography

Article: pp. 1207–1213 | [Abstract](#) | [PDF \(514K\)](#)

On the Generation of Geostrophic Eddies by Surface Buoyancy Flux Anomalies

Claude Frankignoul

Department of Meteorology, Massachusetts Institute of Technology, Cambridge, MA 02139

Peter Müller

Center for Earth and Planetary Physics, Harvard University, Cambridge, MA 02138

(Manuscript received March 6, 1979, in final form June 13, 1979)

DOI: 10.1175/1520-0485(1979)009<1207:OTGOGE>2.0.CO;2

ABSTRACT

Stochastic fluctuations in the buoyancy flux at the air-sea interface create density anomalies in the oceanic surface layer, which drive quasi-geostrophic motions in the ocean interior. The efficiency of this forcing mechanism is evaluated by comparison with wind-stress forcing. Stochastic buoyancy forcing is found to be always negligible in the wavenumber-frequency range of oceanic geostrophic eddies. The effect of mass exchange anomalies at the surface is also found to be negligible. The conclusions seem applicable to time scales up to centuries.

Options:

- [Create Reference](#)
- [Email this Article](#)
- [Add to MyArchive](#)
- [Search AMS Glossary](#)

Search CrossRef for:

- [Articles Citing This Article](#)

Search Google Scholar for:

- [Claude Frankignoul](#)
- [Peter Müller](#)

top ▲



